Clarke air

REVERSIBLE RATCHETS

MODEL CAT108 (1/2”) & CAT109 (3/8”)

Part Nos: 3120110 & 3120116

OPERATING & MAINTENANCE INSTRUCTIONS

CE

GC0409

INTRODUCTION

Thank you for purchasing this CLARKE product.

Before attempting to use the reversible ratchet, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to the reversible ratchet giving you long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

ENVIROMENTAL PROTECTION

Do not dispose of this product with general household waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of appropriately.

PARTS & SERVICING

For parts & Servicing, please contact your nearest dealer, or CLARKE International, on one of the following numbers.

PARTS & SERVICE TEL: 020 8988 7400
PARTS & SERVICE FAX: 020 8558 3622
or e-mail as follows:
PARTS: Parts@clarkeinternational.com
SERVICE: Service@clarkeinternational.com

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OVERVIEW

The CAT108 and CAT109 Reversible Ratchets are ideal for use in garages and workshops. The tool features a steel angle head & aluminium body, front exhaust & ergonomic grip.

Unpack and lay out the components, checking against the following list. Any damage or deficiency should be reported to your CLARKE dealer immediately.

- Reversible ratchet
- Male Snap Connector
- Bottle of Airline Oil
- Operators Manual (this document)

Your reversible ratchet has been designed to give long and trouble free service. If, however, having followed the instructions in this booklet carefully, you encounter problems, take the unit to your local CLARKE dealer.

SAFETY PRECAUTIONS

WORK ENVIRONMENT

- Keep the work area clean and tidy.
- Dress appropriately - Do not wear loose clothing or jewellery. Tie long hair out of the way.
- Keep children and visitors away - Do not let children handle the tool. Make sure that any other persons in the work area are dressed suitably and are wearing eye and ear protectors.
- Keep the air supply hose away from heat, oil and sharp edges.
- Do not fit the tool to any stand or clamping device that may damage the tool.

GENERAL USE

- Stay alert and use common sense - do not use the tool when you are tired or under the influence of alcohol, drugs or medication.
- Always wear eye protection when using the tool - eye protection must provide protection from the front and the side.
- Always wear ear protectors when using the tool.
- Do not over-reach - keep proper footing and balance at all times.
- Never use any type of bottled gas as a source of power for the tool.
- Do not connect the air supply hose with your finger on the trigger of the tool.
- Do not exceed the maximum pressure for the tool: 90 psi / 6.2 bar.
- Check hoses for leaks or worn condition before use and ensure that all connections are secure.
- Do not use the tool for any other purpose than that described in this booklet.
- Do not carry out any alterations or modifications to the tool.
- The tool should be serviced as required by your CLARKE dealer.
- Never use the tool if it is defective or operating abnormally.
- ALWAYS ensure the workpiece is firmly secured leaving both hands free to control the tool.
- ALWAYS ensure the tool has stopped before putting it down after use.
- ALWAYS ensure that any attachments are correctly fastened before connecting the tool to the power supply.

- Always disconnect from the air supply when:
  a) Performing any maintenance.
  b) The tool is not in use.
  c) The tool will be left unattended.
  d) Moving to another work area.
- Avoid damaging the tool for example by applying excessive force.
- ALWAYS maintain the tool with care. Keep it clean for best and safest performance.
- Quick change air-line couplings should not be located at the tool. They add weight and could fail due to vibration.
- DO NOT force or misuse the tool. It will do a better and safer job at the rate for which it was designed.
- This tool vibrates during use. Vibration may be harmful to your hands or arms. Stop using the tool if discomfort, a tingling feeling or pain occurs and seek medical advice before resuming use.

TRANSPORTATION

- Never carry the tool by the air supply hose.
- Never carry the tool with your finger on the trigger.

STORAGE

- When not in use the tool must be disconnected from the air supply and stored in a dry place out of the reach of children (preferably in a locked cabinet).
- Avoid storage in environments where the temperature is below 0°C.

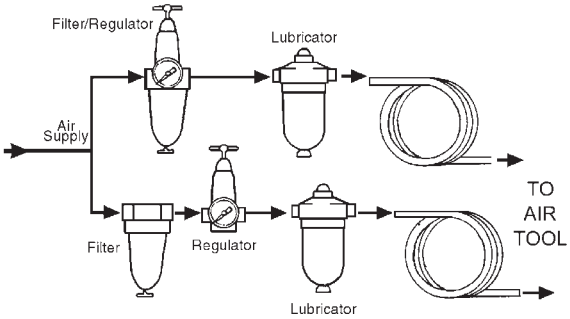
AIR SUPPLY REQUIREMENTS

WARNING: COMPRESSED AIR CAN BE DANGEROUS. ENSURE THAT YOU ARE THOROUGHLY FAMILIAR WITH ALL PRECAUTIONS RELATING TO THE USE OF COMPRESSORS AND COMPRESSED AIR SUPPLY.

- Air compressors used with the tool must comply with the appropriate European Community safety directives.
- Use only clean, dry, regulated compressed air as a power source.
- A build up of moisture in the air compressor will accelerate wear and corrosion in the moving parts. Ensure any moisture is drained from the compressor daily and the inlet filter is kept clean.

- If an unusually long air hose is required, (over 8 metres), line presure may need to be increased.

A typical airline layout is shown on the right. If an automatic in-line filter/ regulator/lubricator unit is used it will keep the tool in good condition, but should be regularly checked and topped up with oil.



IMPORTANT: If a filter/ lubricator unit is not used, the tool should be lubricated with 2 to 6 drops of oil, at least once a day or after 2 hours work, depending upon the working environment. The oil can be inserted through the airline connection point.

AIRLINE SAFETY

- Never exceed the maximum operating pressure for the tool. A pressure of 90psi with a flow of 4 cfm is required. Too high an air pressure will shorten the life of the tool due to excessive wear.
- The air hose must be rated at least 150% of the maximum operating pressure of the tool.

ASSEMBLY

1. Remove the plastic blanking plug from the connection port of the tool as shown in Fig 1.
2. Pour 2-3 drops of CLARKE airline oil into the air inlet. This should be done regardless of whether or not a lubricated air supply is to be used.
3. Connect a suitable hose to the tool as shown. Use the screw-in adapter supplied if required.
4. Connect the other end of the hose to the compressor.

(A whip hose with a quick fit coupling is available from your CLARKE dealer).

5. Turn on the air supply and check for air leaks. Rectify any found before proceding.

The tool is now ready for use.

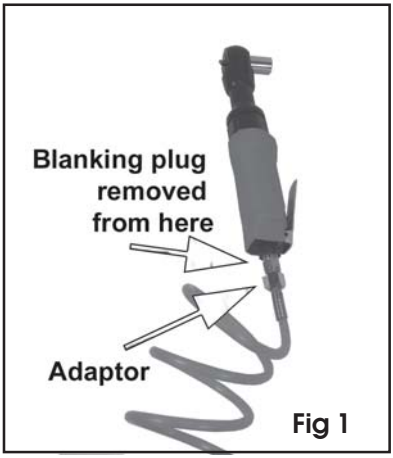


Fig 1

OPERATING INSTRUCTIONS

IMPORTANT: Only use sockets designed for use with a ratchet wrench;- either 3/8" (10mm) for the CAT109 or 1/2" (13mm) for the CAT108.

1 Select the socket you require.

2. Press the socket until it clicks into place on the square drive.
3. Place the socket over the subject nut.

- Take care that the socket is firmly engaged on the nut to be tightened or removed.

4. Squeeze the trigger against the body of the tool to start as in Fig 2.
5. Release the trigger to stop the tool.
6. Always ensure the tool has stopped before putting it down.
7. To change the direction, twist the control at the tip of the tool to either 'F' for forward or 'R' for reverse as in Fig 3.

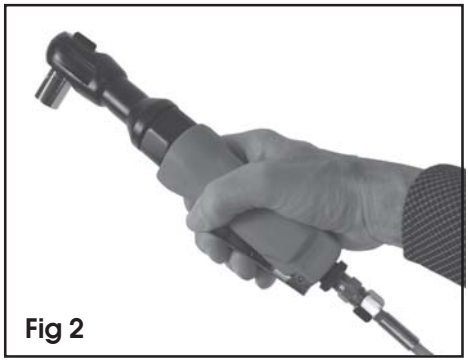


Fig 2

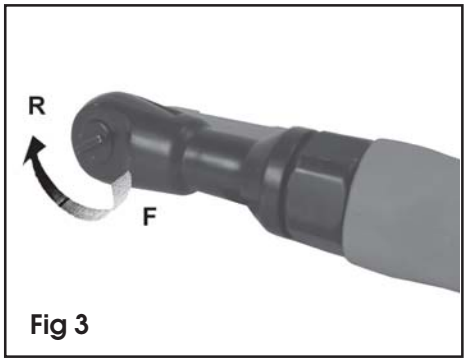


Fig 3

DISCONNECTING THE AIR SUPPLY

1. Do not disconnect the air supply hose until the compressor has been shut down and the compressed air pressure released.
2. Once the pressure has been released, disconnect the air supply hose from the tool.

STORAGE

1. Store the tool safely in its box in a dry, secure environment.
2. If the tool is not to be used for longer than 24 hours, run a few drops of CLARKE airline oil into the air inlet and run the tool for a few seconds to ensure that the oil has been well distributed throughout the tool.
3. When storing, ensure the blanking plug is replaced on the airline connector once the airline has been disconnected.

MAINTENANCE

WARNING! Make sure that the ratchet wrench is disconnected from the air supply before starting any cleaning or maintenance procedures.

DAILY

- Drain water from the compressor air tank and air-line.
- Pour a few drops of CLARKE air line oil**, into the air inlet. This should be carried out regardless of whether or not an air line lubricator is used. If an air-line lubricator is not used, this procedure should be repeated after every two to three hours of use.

Fig 4

WEEKLY

- Check the air inlet screen filter shown in Fig 4 and clean if necessary.

CLEANING

- Keep the body of the tool clean and free from debris. Grit or gum deposits in the tool may reduce efficiency.
- After extensive use, remove the inlet screen filter and flush out the mechanism with gum solvent oil or an equal mixture of SAE No10 oil and paraffin. Allow to dry before use.

SERVICE AND REPAIR

- Any major servicing and repairs should be carried out by your local CLARKE dealer.

PERFORMANCE

Please note that factors other than the tool may effect its operation and efficiency such as reduced compressor output, excessive drain on the airline, moisture, or restrictions in the line, or the use of connectors of improper size or poor condition which will reduce air supply.

**Clarke Airline Oil is available from your CLARKE dealer part no. 3050825.

ACCESSORIES

A wide range of accessories are available including filter/regulators, lubricators, high pressure hoses, etc. Contact your CLARKE dealer for further information, or call CLARKE International on 01992 565333.

Suitable Ratchet Wrench compatible socket sets include the following:

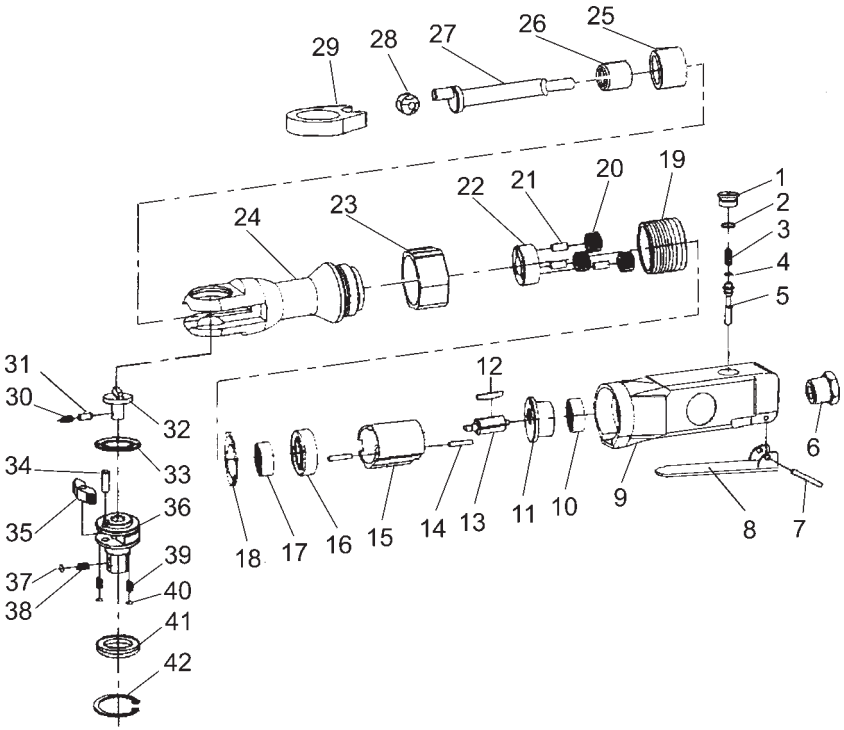
1700431	PRO31	10 piece 1/2" drive AF socket set
1700432	PRO32	10 piece 1/2" drive metric socket set
1700437	PRO37	7 piece 1/2" drive deep AF socket set
1700438	PRO38	9 piece 1/2" drive deep metric socket set
1700452	PRO52	6 piece 1/2" drive hex bit socket set
1700429	PRO29	9 piece 3/8" drive AF socket set
1700430	PRO30	9 piece 3/8" drive metric socket set
1700435	PRO35	8 piece 3/8" drive deep AF socket set
1700436	PRO36	8 piece 3/8" drive deep metric socket set
1700451	PRO51	6 piece 3/8" drive hex bit socket set

TROUBLESHOOTING

SYMTOM	PROBLEM	SOLUTION
Tool runs at normal speed but slows under load.	1. Motor parts worn.	1. Return to dealer for overhaul
	2. Worn or sticking mechanism due to lack of lubricant.	2. Drip air tool lubricating oil into air inlet and soak moving parts.
Tool runs slowly. Air flows lightly from exhaust.	1. Motor parts jammed with gum &/or dirt particles.	1. Examine inlet air filter for cleanliness.
	2. Regulator in closed position.	2. Adjust regulator to open position.
	3. General airflow blocked by dirt.	3. Operate tool in short bursts of forward/reverse rotation.
Tool will not run. Air flows freely from exhaust.	1. Motor vanes stuck due to buildup of foreign materal.	1. Disconnect air supply & rotate tool assembly manually.
		2. Try operating tool in short bursts of forward/reverse rotation.
		3. Tap motor housing gently with rubber mallet.
		4. Drip air tool lubricating oil into air inlet and soak moving parts.
Tool will not shut off.	1. Damaged or dislodged throttle O-rings.	1. Replace O-ring

In the event that any of the above situations occurs, requiring the dismantling and overhaul of the tool, contact your CLARKE International Service Department on 020-8988-7400.

PARTS LIST AND PARTS DIAGRAM



No	Description	Part No
1	Screw Cap	RONCAT10801
2	O-Ring	RONCAT10802
3	Spring	RONCAT10803
4	O-Ring	RONCAT10804
5	Valve Stem	RONCAT10805
6	Air Inlet Plug	RONCAT10806
7	Pin	RONCAT10807
8	Trigger	RONCAT10808
9	Housing	RONCAT10809
10	Rear Bearing	RONCAT10810
11	Rear Plate	RONCAT10811
12	Rotor Blade	RONCAT10812

No	Description	Part No
13	Rotor	RONCAT10813
14	Pin	RONCAT10814
15	Cylinder	RONCAT10815
16	Front Plate	RONCAT10816
17	Bearing	RONCAT10817
18	Washer	RONCAT10818
19	Gear Housing	RONCAT10819
20	Idler Gear	RONCAT10820
21	Idler Gear Pin	RONCAT10821
22	Idler Gear Seat	RONCAT10822
23	Clamp Nut	RONCAT10823
24	Nose Section	RONCAT10824

No	Description	Part No
25	Needle Bearing	RONCAT10825
26	Bearing Shell	RONCAT10826
27	Crankshaft	RONCAT10827
28	Drive Bushing	RONCAT10828
29	Ratchet Yoke	RONCAT10829
30	Spring	RONCAT10830
31	Locking Pin	RONCAT10831
32	Reverse Switch	RONCAT10832
33	Washer	RONCAT10833

No	Description	Part No
34	Pin	RONCAT10834
35	Ratchet Pawl	RONCAT10835
36	Ratchet Anvil	RONCAT10836
37	Steel Ball	RONCAT10837
38	Spring	RONCAT10838
39	Spring	RONCAT10839
40	Steel Ball	RONCAT10840
41	Washer	RONCAT10841
42	Retaining Ring	RONCAT10842

Please note that the above parts list is for the CAT108 model. In the case of the CAT109 model, the list of items is identical but part numbers RONCAT10901 onwards should be requested.

TECHNICAL SPECIFICATION

Feature	Specification	
Model	CAT108	CAT109
Square Drive	1/2" (13mm)	3/8" (10mm)
Weight	1.2 kg (2.4 lbs)	1.2 kg (2.4 lbs)
Dimensions (l x w x h)	265 x 48 x 42 mm	265 x 48 x 42 mm
Free Running Speed	160 rpm	160 rpm
Max Torque	50 ft/lb (68N.m)	50 ft/lb (68N.m)
Working Air Pressure	90 psi (6.2 bar)	90 psi (6.2 bar)
Average Air Consumption	4 cfm (114 l/min)	4 cfm (114 l/min)
Inlet Air Connection	1/4" BSP	1/4" BSP
A-weighted sound pressure level	92.1 dB (A)	91.5 dB (A)
Sound Power Level	103.1 dB(A)	102.5 dB(A)
Vibration at the handle	0.8 m/s^2	0.8 m/s^2

Please note that the details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice.

VIBRATION EMISSIONS

HAND-ARM VIBRATION

Employers are advised to refer to the HSE publication "Guide for Employers".

All hand held power tools vibrate to some extent, and this vibration is transmitted to the operator via the handle, or hand used to steady the tool. Vibration from about 2 to 1500 herz is potentially damaging and is most hazardous in the range from about 5 to 20 herz.

Operators who are regularly exposed to vibration may suffer from Hand Arm Vibration Syndrome (HAVS), which includes 'dead hand', 'dead finger', and 'white finger'. These are painful conditions and are widespread in industries where vibrating tools are used.

The health risk depends upon the vibration level and the length of time of exposure to it……in effect, a daily vibration dose.

Tools are tested using specialised equipment, to approximate the vibration level generated under normal, acceptable operating conditions for the tool in question. For example, a grinder used at 45° on mild steel plate, or a sander on softwood in a horizontal plane etc.

These tests produce a value 'a', expressed in metres per second per second, which represents the average vibration level of all tests taken, in three axes where necessary, and a second figure 'K', which represents the uncertainty factor, i.e. a value in excess of 'a', to which the tool could vibrate under normal conditions. These values appear in the specification panel below.

MODEL No: **CAT108 & CAT109**

DESCRIPTION: **REVERSIBLE RATCHETS**

Declared vibration emission value in accordance with EN12096

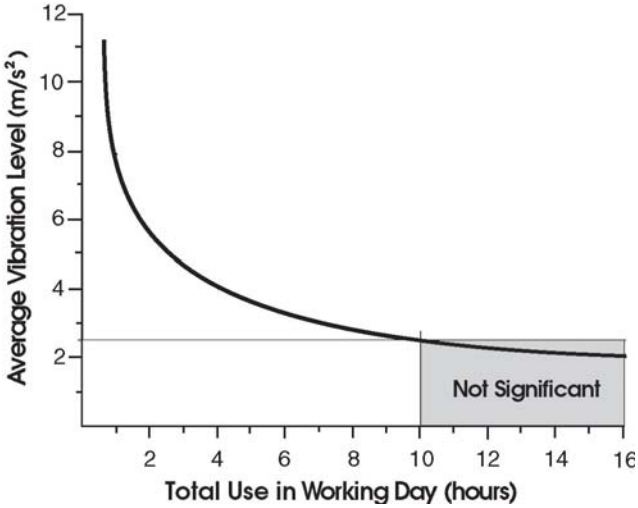
Measured vibration emission value - *a:* less than 2.5m/s^2

Values determined according to EN28622-1

You will note that a third value is given in the specification - the highest measured reading in a single plane. This is the maximum level of vibration measured during testing in one of the axes, and this should also be taken into account when making a risk assessment.

'*a*' values in excess of 2.5 m/s^2 are considered hazardous when used for prolonged periods. A tool with a vibration value of 2.8 m/s^2 may be used for up to 8 hours (cumulative) per day, whereas a tool with a value of 11.2 m/s^2 may be used for ½ hour per day only.

The graph below shows the vibration value against the maximum time the respective tool may be used, per day.



The uncertainty factor should also be taken into account when assessing a risk. The two figures '*a*' and '*K*' may be added together and the resultant value used to assess the risk.

It should be noted that if a tool is used under abnormal, or unusual conditions, then the vibration level could possibly increase significantly. Users must always take this into account and make their own risk assessment, using the graph above as a reference.

Some tools with a high vibration value, such as impact wrenches, are generally used for a few seconds at a time, therefore the cumulative time may only be in the order of a few minutes per day. Nevertheless, the cumulative effect, particularly when added to that of other hand held power tools that may be used, must always be taken into account when the total daily dose rate is determined.

DECLARATION OF CONFORMITY

CE

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Hemnall Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

98/37/ EC *Machinery Directive.*

The following standards have been applied to the product(s):

EN 792-:6:2000

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2007

Product Description:	½ Air Ratchet Wrench
Model number(s):	CAT 108
Serial / batch Number:	N/A
Date of Issue:	17/03/09

Signed:

J.A. Clarke

Managing Director

08-0431 1-2 Air Ratchet Wrench CAT 108 (rv1) Page 1 of 1

DECLARATION OF CONFORMITY

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Hemnall Street, Epping, Essex CM16 4LG

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The CE mark was first applied in: 2007

Product Description:	3/8 Air Impact Wrench
Model number(s):	CAT 109
Serial / batch Number:	N/A
Date of Issue:	17/03/09

Signed:

.....

J.A. Clarke

Managing Director

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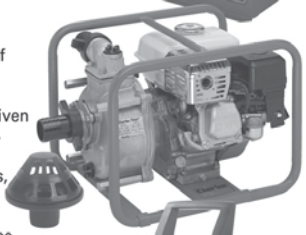

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